UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/866,067	05/23/2001	Thomas J. Meade	A-58762-20/RFT/RMS/RMK	7813

7590 07/29/2004

Robin M. Silva
FLEHR HOHBACH TEST ALBRITTON & HERBERT LLP
Suite 3400
Four Embarcadero Center
San Francisco, CA 94111-4187

EXAMINER	
LU, FRANK WEI MIN	
ART UNIT	**PAPER NUMBER**
1634	

DATE MAILED: 07/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/866,067	MEADE ET AL.	
	Examiner	Art Unit	
	Frank W Lu	1634	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 April 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *21-32* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *21-32* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *23 May 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Response to Amendment

1. Applicant's response to the office action filed on April 19, 2004 has been entered. The terminal disclaimer filed on April 19, 2004 has been accepted by the office. The claims pending in this application are claims 21-32. Rejection and/or objection not reiterated from the previous office action are hereby withdrawn in view of applicant's response filed on August 25, 2003.

Specification

2. The substitute specification filed on April 19, 2004 related to the first sentence of the specification has not been entered because it does not conform to 37 CFR 1.125(b) and (c) because applicant does not provide a marked up version of the substitute specification.

3. The substitute specification filed on April 19, 2004 related to pages 13 and 14 has not been entered because it does not conform to 37 CFR 1.125(b) and (c) because applicant does not provide a substitute specification in clean form without markings.

Since the specification filed on April 19, 2004 has not been entered. The following objections on the specification and priority are maintained.

The disclosure is objected to because of the following informality: there are Figures 1A to 1H, Figures 2A-1 to 2A-9, and Figures 2B-1 to 2B-9. However, BRIEF DESCRIPTION OF THE DRAWINGS only describes Figures 1 and 2.

Appropriate correction is required.

Priority

4. An application in which the benefits of an earlier application are desired must contain a specific reference to the prior application(s) in the first sentence of the specification of in an application data sheet (37 CFR 1.78(a)(2) and (a)(5)). The specific reference to any prior nonprovisional application must include the relationship (i.e., continuation, divisional, or continuation-in-part) between the applications except when the reference is to a prior application of a CPA assigned the same application number. Although this instant application claims priority for earlier applications, these earlier applications are not listed in the first sentence of the specification.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 21-23 and 27-29 are rejected under 35 U.S.C. 102(b) as being anticipated by Inoue *et al.*, (US Patent No. 4,965,350, published on October 1990).

Inoue *et al.*, teach pyridopyrimidine nucleotide compounds.

Regarding claims 21-23, according to the specification, "electron donor moiety" and "electron acceptor moiety" are "molecules capable of electron transfer under certain conditions.

It is to be understood that electron donor and acceptor capabilities are relative; that is, a molecule which can lose an electron under certain experimental conditions will be able to accept an electron under different experimental conditions" (see the specification, page 15, lines 6-15). Since 3-(5'-O-triphosphoryl-beta-D-deoxyribofuranosyl) 2,7-dioxopyrido[2,3-d]pyrimidine (see Examples 1-3 in columns 13-16) has three phosphates and a hydroxyl group on the 3' position of its ribose (covalently attached) and it is known that the hydroxyl group can donate a pair of electrons, 3-(5'-O-triphosphoryl-beta.-D-deoxyribofuranosyl)2,7-dioxopyrido[2,3-d]pyrimidine is a modified nucleotide triphosphate as recited in claims 21 and 22. Since 3-(5'-O-triphosphoryl-beta-D-deoxyribofuranosyl) 2,7-dioxopyrido[2,3-d]pyrimidine is only one example of pyridopyrimidine nucleotide taught by Inoue *et al.*, 2' position of the pyridopyrimidine nucleotide had W1 which can be either hydrogen or hydroxyl group (see column 2), the pyridopyrimidine nucleotide with a hydroxyl group on its 2' position taught by Inoue *et al.*, is a modified nucleotide triphosphate as recited in claim 23.

Regarding claims 27-29, since Inoue *et al.*, teach that 3-(5'-O-phosphoryl-beta-D-2'-deoxyribofuranosyl)-2,7-dioxopyrido[2,3-d]pyrimidine (see column 14) has a phosphate and a hydroxyl group on the 3' position of its ribose (covalently attached) and it is known that the hydroxyl group can donate a pair of electrons, 3-(5'-O-phosphoryl-beta-D-2'-deoxyribofuranosyl)-2,7-dioxopyrido[2,3-d]pyrimidine is a modified nucleotide as recited in step a) of claim 27. Since 3-(5'-O-phosphoryl-beta-D-2'-deoxyribofuranosyl)-2,7-dioxopyrido[2,3-d]pyrimidine is used to synthesize to 3-(5'-O-triphosphoryl-beta-D-deoxyribofuranosyl)2,7-dioxopyrido[2,3-d]pyrimidine wherein 3-(5'-O-triphosphoryl-beta-D-deoxyribofuranosyl)2,7-dioxopyrido[2,3-d]pyrimidine (see Examples 1-3 in columns 13-16) has three phosphates and a

hydroxyl group on the 3' position of its ribose (covalently attached) (see columns 13-16), and it is known that the hydroxyl group has a pair of electrons, 3-(5'-O-triphosphoryl-beta-D-deoxyribofuranosyl)2,7-dioxopyrido[2,3-d]pyrimidine is a modified nucleotide triphosphate as recited in step b) of claim 27 and claim 28, Inoue *et al.*, disclose providing a modified nucleotide comprising a covalently attached electron transfer moiety (ie., (5'-O-phosphoryl-beta-D-2'-deoxyribofuranosyl)-2,7-dioxopyrido[2,3-d]pyrimidine) and converting said modified nucleotide into a modified nucleotide triphosphate (ie., 3-(5'-O-triphosphoryl-beta-D-deoxyribofuranosyl)2,7-dioxopyrido[2,3-d]pyrimidine) as recited in steps a) and b) of claim 27. Since 3-(5'-O-triphosphoryl-beta-D-deoxyribofuranosyl)2,7-dioxopyrido[2,3-d]pyrimidine is used for synthesis of the dodecamers containing a fluorescent pyrimidine nucleotide (see Figure 1 and example 4 in columns 16-18), Inoue *et al.*, disclose incorporating said modified nucleotide triphosphate in a synthetic reaction to form a nucleic acid with a covalently attached electron transfer moiety (ie., dodecamers containing a fluorescent pyrimidine nucleotide) as recited in step c) of claim 27. Besides 3-(5'-O-triphosphoryl- beta-D-deoxyribofuranosyl) 2,7-dioxopyrido[2,3-d]pyrimidine, Inoue *et al.*, teach other pyridopyrimidine nucleotide wherein X_1, Y_1, Z_1, W_1, R_1 and R_2 can be different atoms or groups (see (I) in column 2). When X_1, Y_1, Z_1, R_1 and R_2 of (I) and 3-(5'-O-triphosphoryl- beta-D-deoxyribofuranosyl) 2,7-dioxopyrido[2,3-d]pyrimidine are identical and W_1 of (I) is a hydroxyl group, (I) becomes 3-(5'-O-triphosphoryl-beta-D-ribofuranosyl) 2,7-dioxopyrido[2,3-d]pyrimidine while X_1, Y_1, Z_1, R_1 and R_2 of (I) and 3-(5'-O-phosphoryl-beta-D-2'-deoxyribofuranosyl)-2,7-dioxopyrido[2,3-d]pyrimidine are identical and W_1 of (I) is a hydroxyl group, (I) becomes 3-(5'-O-phosphoryl-beta-D-2'-ribofuranosyl)-2,7-dioxopyrido[2,3-d]pyrimidine. Therefore, Inoue *et al.*, teach that said electron

transfer moiety (ie., W_1 of (I) is a hydroxyl group) is attached to the ribose via a linker at the 2' position as recited in claim 29.

Therefore, Inoue *et al.*, teach all limitations recited in claims 21-23 and 27-29.

Response to Arguments

In page 5, last paragraph bridging to first paragraph of applicant's remarks, applicant argues that "contrary to the assertion by the Examiner, the cited compound does not have the claimed 2' hydroxyl. This is clear not only from the name of the compound ('deoxyribofuranosyl') but also by review of the cited Examples. For instance, in Example 3 the compound is labeled 'd' and contains no hydroxyl on the 2' carbon of the ribose. See Column 16, Lines 15-30. Thus, the Examiner has not pointed to any disclosure in Inoue that teaches nucleotide triphosphates having an attached ETM as is currently claimed in either the composition claims (Claims 21-23) or the method claims".

This argument has been fully considered but it is not persuasive toward the withdrawal of the rejection. First, since claims 21, 22, 27, and 28 do not require that said electron transfer moiety is attached to the ribose via a linker at the 2' position, applicant's argument related to 2' hydroxyl is not related to the rejection on claims 21, 22, 27, and 28. Second, the examiner agrees with applicant that 3-(5'-O-triphosphoryl-beta-D-deoxyribofuranosyl)2,7-dioxopyrido[2,3-d]pyrimidine does not have a hydroxyl group on the 2' position of its ribose. However, besides 3-(5'-O-triphosphoryl- beta-D-deoxyribofuranosyl) 2,7-dioxopyrido[2,3-d]pyrimidine, Inoue *et al.*, teach other pyridopyrimidine nucleotide wherein X_1, Y_1, Z_1, W_1, R_1 and R_2 can be different atoms or groups (see (I) in column 2). When X_1, Y_1, Z_1, R_1 and R_2 of (I) and 3-(5'-O-triphosphoryl- beta-D-deoxyribofuranosyl) 2,7-dioxopyrido[2,3-d]pyrimidine are

identical and W_1 of (I) is a hydroxyl group, (I) becomes 3-(5'-O-triphosphoryl- beta-D-ribofuranosyl) 2,7-dioxopyrido[2,3-d]pyrimidine while X_1, Y_1, Z_1, R_1 and R_2 of (I) and 3-(5'-O-phosphoryl-beta-D-2'-deoxyribofuranosyl)-2,7-dioxopyrido[2,3-d]pyrimidine are identical and W_1 of (I) is a hydroxyl group, (I) becomes 3-(5'-O-phosphoryl-beta-D-2'-ribofuranosyl)-2,7-dioxopyrido[2,3-d]pyrimidine. Therefore, Inoue *et al.*, teach that said electron transfer moiety (ie., W_1 of (I) is a hydroxyl group) is attached to the ribose via a linker at the 2' position as recited in claims 23 and 29.

7. Claims 21, 22, 24, 25, 27, 28, 30, and 31 are rejected under 35 U.S.C. 102(e) as being anticipated by Bannwarth *et al.*, (US Patent No. 5,278,043, filed on January 1991).

Bannwarth *et al.*, teach ruthenium-lumazine energy transfer systems.

Regarding claims 21, 22, 24, and 25, according to the specification, "electron donor moiety" and "electron acceptor moiety" are "molecules capable of electron transfer under certain conditions. It is to be understood that electron donor and acceptor capabilities are relative; that is, a molecule which can lose an electron under certain experimental conditions will be able to accept an electron under different experimental conditions" (see page 15, lines 6-15).

Since Bannwarth *et al.*, teach that a chromophore of the lumazine type in a nucleic acid and ruthenium complex (see Figure 6) in anther nucleic acid comprise a donor-acceptor energy transfer system (see column 2, lines 20-36) and it is known that a donor-acceptor energy transfer includes transfer of electrons, ruthenium complex such as the Ru complex H-phosphonate (see Figure 6) is an electron transfer moiety as recited in claim 21. Since Ru complex H-phosphonate is covalently attached to ribose of guanine and a modified nucleotide triphosphate (see Figure 1)

is considered as a nucleotide that is different from a nucleotide triphosphate, claims 21, 22, 24, and 25 are anticipated by Bannwarth *et al.,* wherein the Ru complex H-phosphonate is a modified nucleotide triphosphate as recited in claims 21, 22, 24, and 25.

Regarding claims 27, 28, 30, and 31, since Ru complex H-phosphonate is covalently attached to ribose of guanine and a modified nucleotide triphosphate is considered as a nucleotide that is different from a nucleotide triphosphate (see Figures 1 and 6), Ru complex and Ru complex H-phosphonate are considered as a modified nucleotide as recited in step a) of claim 27 and a modified nucleotide triphosphate as recited in step b) of claim 27 respectively. Since a modified nucleotide triphosphate is used for synthesis of oligonucleotides (see column 5, lines 1-20), step c) of claim 27 is anticipated by Bannwarth *et al.*. Since Ru complex H-phosphonate is covalently attached to ribose of guanine and a modified nucleotide triphosphate (see Figure 1) is considered as a nucleotide that is different from a nucleotide triphosphate, claims 28, 30, and 31 are anticipated by Bannwarth *et al.,* wherein the Ru complex H-phosphonate is a modified nucleotide triphosphate.

Therefore, Bannwarth *et al.,* teach all limitations recited in claims 21, 22, 24, 25, 27, 28, 30, and 31.

Response to Arguments

I. In page 7, second paragraph of applicant remarks, applicant argues that a "modified nucleotide triphosphate" does not include "modified nucleotide monophosphates, such as the modified nucleotide monophosphate described in Bannwarth" in view of the specification, at page 21, line 20 to page 22, line 6.

This argument has been fully considered but it is not persuasive toward the withdrawal

of the rejection. First, since the specification does not provide a definition for "modified nucleotide triphosphate", it is reasonably to consider modified nucleotide monophosphate described in Bannwarth as a modified nucleotide monophosphate described in Bannwarth since a nucleotide monophosphate is a modified product of a nucleotide triphosphate after the nucleotide triphosphate loses two phosphates. Second, the specification, at page 21, line 20 to page 22, line 6 describes that a "modified nucleotide triphosphate" is 2' or 3' modified nucleotide triphosphate, the 2' or 3' modified nucleotide triphosphate is an example of the modified nucleotide triphosphate and can not be used for the definition of "modified nucleotide triphosphate". Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

II. In page 7, last paragraph bridging to page 8, first paragraph of applicant's remarks, applicant argues "[T]he Examiner's basic position appears to be that covalent attachment to a phosphate of a nucleic acid is a covalent attachment to the ribose of the nucleic acid. This interpretation is clearly not supported by the specification, which distinguishes between covalent attachment to the ribose, phosphate backbone and the base. Thus, the Examiner's interpretation of the term 'covalently attached' clearly exceeds the use of the term found in the specification, for example at page 32, line 25 to page 33, line 2: in accordance with a further aspect of the invention, the preferred formulations for donors and acceptors will possess a transition metal covalently attached to a series of ligands and further covalently attached to an amine group as part of the ribose ring (2' or 3' position) or to a nitrogen or sulfur atom as part of a nucleotide dimer linked by a peptide bond, phosphoramidate bond, phosphorothioate bond,

phosphorodithioate bond or O-methyl phosphoramidate bond. This passage differentiates between covalent attachment at the 2' position and covalent attachment at the 3' position of a ribose, which would not exist under the Examiner's interpretation".

This argument has been fully considered but it is not persuasive toward the withdrawal of the rejection. Since Bannwarth *et al.,* teach that Ru complex H-phosphonate is covalently attached to ribose of guanine, the Ru complex H-phosphonate is a modified nucleotide triphosphate as recited in claims 21, 22, 24, and 25. Thus, the Examiner's interpretation of the term 'covalently attached' clearly does not exceed the use of the term found in the specification. Second, claims 21, 22, 24, and 25 do not require that said electron transfer moiety is attached to the ribose via a linker at the 2' position recited in claim 23. Note that the examiner did not reject claim 23 in previous rejection.

III. In page 8, second paragraph of applicant's remarks, applicant argues that "Bannwarth et al. does not teach electron transfer".

This argument has been fully considered but it is not persuasive toward the withdrawal of the rejection because ruthenium complex such as the Ru complex H-phosphonate (see Figure 6) is an electron transfer moiety since it can transfer electrons. Furthermore, from periodic table of chemical table, it is known that Ru is a metal which is capable of accepting electrons.

Claim Rejections – 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claims 26 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bannwarth *et al.*, (January 1991) as applied to claims 21, 22, 24, 25, 27, 28, 30, and 31 above.

The teachings of Bannwarth *et al.*, have been summarized previously, *supra.*

Bannwarth *et al.*, do not disclose said transition metal complex comprising an iron atom as recited in claims 26 and 32.

However, it would have been *prima facie* obvious to one having ordinary skill in the art at the time the invention was made to have used a transition metal complex comprising an iron atom as an electron transfer moiety as recited in claims 26 and 32 in view of the patent of Bannwarth *et al.*. One having ordinary skill in the art would have been motivated to do so because both ruthenium and iron are belong to transition metal VIIIB and the simple replacement of one chemical element (ie., ruthenium) from another chemical element with a similar properties during the process of making a transition metal complex would have been, in the absence of convincing evidence to the contrary, *prima facie* obvious to one having ordinary skill

in the art at the time the invention was made because the replacement would not change the intended use of the transition metal complex.

Furthermore, the motivation to make the substitution cited above arises from the expectation that the prior art elements will perform their expected functions to achieve their expected results when combined for their common known purpose. Support for making the obviousness rejection comes from the M.P.E.P. at 2144.06 and 2144.09.

Also note that there is no invention involved in combining old elements is such a manner that these elements perform in combination the same function as set forth in the prior art without giving unobvious or unexpected results. *In re Rose* 220 F.2d. 459, 105 USPQ 237 (CCPA 1955).

Response to Arguments

In page 9, first to third paragraphs of applicant remarks, applicant argues that "[A]s discussed above, Bannwarth does not teach or suggest the use of modified nucleotide triphosphates as required by Claims 26 and 32. Furthermore, Bannwarth does not teach electron transfer moieties also required by Claims 26 and 32. Accordingly, the Examiner has not carried his burden in establishing a prima facie case of obviousness and therefore Applicants respectfully request withdrawal of the 305 U.S.C. §103(a) rejection.

This argument has been fully considered but it is not persuasive toward the withdrawal of the rejection because Bannwarth teaches the use of modified nucleotide triphosphates and electron transfer moieties also required by claim 26 (see ***Response to Arguments*** on the rejection under 35 U.S.C. 102(e)).

Conclusion

10. No claim is allowed.

11. Papers related to this application may be submitted to Group 1600 by facsimile transmission. Papers should be faxed to Group 1600 via the PTO Fax Center located in Crystal Mall 1. The faxing of such papers must conform with the notices published in the Official Gazette, 1096 OG 30 (November 15, 1988), 1156 OG 61 (November 16, 1993), and 1157 OG 94 (December 28, 1993)(See 37 CAR § 1.6(d)). The CM Fax Center number is either (703) 308-4242 or (703)305-3014.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Frank Lu, Ph.D., whose telephone number is (571)272-0746. The examiner can normally be reached on Monday-Friday from 9 A.M. to 5 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gary Benzion, can be reached on (571)272-0782.

Any inquiry of a general nature or relating to the status of this application should be directed to the Chemical Matrix receptionist whose telephone number is (703) 308-0196.

FRANK LU
PATENT EXAMINER

Frank Lu
PSA
July 23, 2004